

CENTENNIAL CHALLENGES UPDATE – October 2006

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===== CENTENNIAL CHALLENGES BREAKING NEWS =====

Three Centennial Challenges Competitions at the X PRIZE Cup

Centennial Challenges begins an especially exciting time as three competitions--Beam Power, Lunar Lander and Tether Challenges--are held at the X PRIZE Cup, October 20-21, Las Cruces, New Mexico. The X PRIZE Cup is a space exposition which features the competitions, rocket launches, rocket planes, static engine test firings, fly-overs, exhibits and other events.

The Beam Power and Tether Challenges are being held for the second time and are offering larger purses--\$200,000 for each competition. To win, a team's climber must ascend a 50-meter ribbon at a minimum speed of 1 meter per second. The competition has been made more difficult this year--each climber's mass is now constrained to 25 kilograms and teams must provide their own beam power source.

The Lunar Lander Challenge offers a total purse of \$2,000,000—an amount that is a milestone for the program. The Challenge is divided into two levels. To win at either level, a rocket-propelled vehicle and payload must take-off vertically, fly for a period of time, and then land

vertically on a target that is a fixed distance from the take-off point. After remaining at this location for a period of time, the vehicle must take-off, fly for a period of time, and land again on its original launch pad. The primary difference between the two levels will be in the time of flight, the surface terrain at the landing sites, and the corresponding degree of difficulty presented for precision landing and servicing of the vehicles.

For more information about the three Challenges, visit www.centennialchallenges.nasa.gov or click on the links in the UPDATE section "LINKS TO COMPETITIONS."

===== CENTENNIAL CHALLENGES IN THE NEWS =====

Lunar Lander Challenge in August Popular Mechanics

Lunar Lander Challenge: The Challenge and one of the competing teams are featured in an article in the August Popular Mechanics. See the article in the following website:
www.popularmechanics.com/science/space/3381226.html?page=4&c=y

Lunar Lander Challenge in October Popular Science

The competition is featured in this 4-page spread, including a full illustration of the challenge 'Big Hop' (Popular Sci's term!) scenario. NASA, X PRIZE Cup and the team leaders are quoted, and information is provided on other, non-NASA prize competitions.

===== CLASSIC CENTENNIAL CHALLENGES HIGHLIGHTS =====

Centennial Challenges attended the following meetings and conferences and participated as shown:

--- American Institute for Aeronautics and Astronautics (AIAA) Joint Propulsion Conference, Sacramento, California, July 11, 2006, panel.

--- Space Frontier Foundation Conference, Las Vegas, Nevada, July 20-21, 2006, mini-workshop.

--- Experimental Aircraft Association (EAA) Airventure 2006, Oshkosh, WI, panel.

--- International Workshop on In-Situ Resource Utilization, Cleveland Ohio, August 15-17, 2006, presentation.

--- AIAA 2006 Space Conference, San Jose, California, September 20, 2006, panel.

--- HopeLab Childhood Inducement Prize Symposium, Palo Alto, California, September 25, 2006, workshop on prizes.

===== SPECIAL ANNOUNCEMENTS =====

CENTENNIAL CHALLENGE PROGRAM CHANGES

The Centennial Challenges Program has made a number of changes to the plan for competitions. Many competitions are now planned to be held on an annual basis, providing an opportunity for increased challenge, prizes, and potential for new technologies. Note: Changes in competitions and competition schedules may still occur. Watch for press releases from the different Allied Organizations for more information. Follow future Centennial Challenges UPDATES and the website: www.centennialchallenges.nasa.gov.

The following competitions are planned to be held annually:

- Astronaut Glove: 2007-2009
- Beam Power: 2005-2010
- Personal Air Vehicle: 2007-2011
- Regolith Excavation: 2007-2008
- Tether: 2005-2010

The Lunar Lander Challenge is being initially held October, 2006, and may be held in future years to claim any purse money not won in previous years.

The following Challenges have been put on hold:

- Telerobotic Construction Challenge
- Planetary Unmanned Aerial Vehicle (PUAV) Challenge

New Allied Organization for MoonROx

The MoonROx Challenge has a new Allied Organization (AO), the California Space Education & Workforce Institute (CSEWI). As the AO, the CSEWI is responsible for administering the competition. The Florida Space Research Institute (FSRI) was the original AO for this competition, but the organization was dissolved at the end of August 2006 when Space Florida was created to take its place. Centennial Challenges expresses it's gratitude to the FSRI staff who helped to get MoonROx off the ground. MoonROx is a first-to-demonstrate competition, with a deadline of June, 2008.

===== CENTENNIAL CHALLENGES NOTES =====

--- The California Space Education & Workforce Institute (CSEWI) has registered 2 teams and received 189 unique notices of interest as September 29, 2006 for the Regolith Excavation Challenge, to be held May 12, 2007.

--- The Spaceward Foundation Challenges have received the following interest as of the end of September, 2006:

+ 2006 Beam Power: 20 teams registered

+ 2006 Tether: 4 teams registered

--- The Astronaut Glove Challenge has 2 registered teams for the competition planned for spring, 2007.

--- Lunar Lander Challenge: Four teams registered for the October, 2006 competition: Acuity Technologies, Armadillo Aerospace, Masten Space Systems, and Microspace. Registration is now closed.

--- Personal Air Vehicle Challenge: Registration is planned to open November 1. Draft competition rules are now available at: cafefoundation.org/v2/pav_pavchallenge_rules.php

--- Personal Air Vehicle staff presented at the Society of Automotive Engineers International General Aviation Technology Conference & Exhibition on August 31, 2006 in Wichita, Kansas. The presentation was very well-received and was attended by the largest audience of the convention.

===== LINKS TO COMPETITIONS =====

Visit the Centennial Challenges and the following websites for up-to-date status on the Challenges:

2006 Beam Power Challenge

Inspection and qualification of hardware begins on Sunday, Oct. 15, 2006.

Challenge date: Oct. 20-21, 2006

Location: X PRIZE Cup event, Las Cruces, NM

Allied Organization: Spaceward Foundation

Total Purses: \$200k

Challenge home page: www.elevator2010.org/site/competitionClimber2006.html

Rules: www.elevator2010.org/site/documents/climber_rulebook_2006.current.pdf

Registration: www.elevator2010.org/site/competitionClimber2006.html

2006 Tether Challenge

Challenge date: Oct. 20-21, 2006

Location: X PRIZE Cup event, Las Cruces, NM

Allied Organization: Spaceward Foundation

Total Purses: \$200k

Challenge home page: www.elevator2010.org/site/competitionTether2006.html

Rules: www.elevator2010.org/site/documents/tether_rulebook_2006.current.pdf

Registration: www.elevator2010.org/site/competitionTether2006.html

2006 Lunar Lander Challenge

Challenge date: Oct. 20-21, 2006

Location: X PRIZE Cup Expo, Las Cruces, New Mexico

Allied Organization: X PRIZE Foundation

Total Purses: \$2M

Challenge home page: www.xprize.org/newsevents/LunarLanding.html

Rules: http://www.xprize.org/assets/downloads/newsevents/LLC_Rules-2006-07-06.pdf

Registration: Registration closed July 17, 2006. Contact the X PRIZE Foundation, William Pomerantz, (301)395-5283, will@xprize.org. There may be other Lunar Lander Challenges in future years.

2007 Astronaut Glove Challenge

Challenge date: April 2007

Location: To be determined

Allied Organization: Volanz Aerospace

Total Purses: \$250k

Challenge home page: www.astronaut-glove.us

Rules: <http://astronaut-glove.tripod.com/rules.pdf> and <http://astronaut-glove.tripod.com/rules.doc>

Registration: www.astronaut-glove.us (see Team Agreement)

2007 Regolith Excavation Challenge

Challenge date: May 12, 2007

Location: Santa Maria Fair Park, Santa Maria, California

Allied Organization: California Space Education & Workforce Institute (CSEWI)

Total Purses: \$250k

Challenge home page: www.californiaspaceauthority.org/regolith

Rules and Registration: <http://www.californiaspaceauthority.org/regolith/regolith-registration.html>

2007 Personal Air Vehicle (PAV) Challenge

Challenge date: 4-12 August 2007

Location: Santa Rosa, California
Allied Organization: Comparative Aircraft Flight Efficiency Foundation
Total Purses: \$250k
Challenge home page: www.cafefoundation.org/v2/pav_home.htm
Rules: cafefoundation.org/v2/pav_pavchallenge_rules.php
Registration: Scheduled to open November 1, 2007

2008 MoonROx (Moon Regolith Oxygen) Challenge

Challenge date: expires June 1, 2008
Location: First to Demonstrate - dependent on team
Allied Organization: CSEWI
Total Purses: \$250k
Challenge home page:
Rules:
Registration:

===== FUTURE PUBLIC APPEARANCES =====

--- October 20-21, 2006 - Beam Power, Tether, and Lunar Lander Challenges at the X PRIZE Cup in Las Cruces, NM.

--- Nov. 30-Dec. 1, 2006 - California Space Authority Transforming Space Conference, Los Angeles, CA.